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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :

MASAO OZEKI, ET AL. : EXAMINER: SCHECHTER, A. M.

SERIAL NO: 10/658,473 :

FILED: SEPTEMBER 10, 2003 : GROUP ART UNIT: 2871

FOR: COMPOSITE DISPLAY DEVICE  
AND A METHOD FOR DRIVING THE  
SAME

COMMENTS ON REFERENCES FILED BY  
INFORMATION DISCLOSURE STATEMENT ON JANUARY 30, 2004

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicants submit comments of three references filed by Information Disclosure Statement on January 30, 2004 in regard to the above-identified application.

The references include the following three German patent documents:

1. DE 44 07 855 A1
2. DE 100 01 988 A1
3. DE 31 20 601 A1

The following are comments prepared by the Applicants on the three documents listed above:

Comments of the Disclosed References

1. DE 44 07 855 A1 (D1)

D1 discloses a combination instrument 1 for automobiles, comprising a covering plate 2, a first display 3 and a liquid crystal cell 6 (please refer to Fig. 1). The liquid crystal cell 6 is transparent in a deactivated state, so that the first display 3 may be observed through it. In an activated state the liquid crystal cell 6 reproduces the desired information using a matrix of liquid crystal cells (col. 1, lines 33 to 37 of D1). In a preferred embodiment of the invention (Fig. 1, col. 1, lines 47 to 52, col. 2, lines 37 to 41) the liquid crystal cell 6 represents the desired information negatively, i.e. in the activated state of the liquid crystal cell 6, the background becomes dark and only the displayed symbols remain transparent. Subsequently, observation of the first display 3 is no longer possible. Further, the combination instrument 1 is equipped with a lamp 7 for illuminating the liquid crystal cell 6, optionally with a colored light.

According to a second embodiment of D1, shown in Fig. 2 and col. 2, lines 47 to 61 of D1, the combination instrument 1 further comprises a second liquid crystal cell 8, preferably in form of a foil having flexible substrates. The second liquid crystal cell 8 is not transparent when the liquid crystal cell 6 is activated and is transparent when the liquid crystal cell 6 is deactivated and covers the first display 3, so that the first display 3 does not disturb the readability of the liquid crystal cell 6. This is in particular advantageous, if the liquid crystal cell 6 represents the information positively, i.e. the symbols which are to be represented are dark and the background transparent.

2. DE 100 01 988 A1 (D2)

D2 discloses a display 10 which is mounted spatially close to other display instruments 2, 3, but is raised towards the observer in relation to the display plane of the display instruments 2, 3. The display 10 is preferably translucent. The display 10 represents information by activating for example the liquid crystal cells within the display 10, so that

only the activated information segments change their color. In the remaining areas, forming the background, the display is transparent (col. 2, lines 8 to 20 of D2).

According to the first embodiment of the invention, the display 10:

“Is formed to be translucent, so that as a whole it appears see-through like a tinted glass” (col. 3, lines 13 to 14 of D2).

Within the display there are arranged a plurality of electrically controlled liquid crystal elements as in conventional displays (col., 3, lines 14 to 17 of D2). Upon a corresponding activation of the display, only the areas in which symbols, etc. are to be represented are colored and accordingly made opaque. In the remaining areas, representing the background in conventional displays, the display according to the invention stays translucent. Thus the readability of the display instruments 2, 3 is not impaired (col. 3, lines 28 to 36 of D2). The display 10 may be programmable and may be used as a multifunctional display.

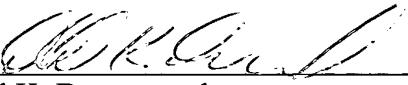
3. DE 31 20 601 A1 (D3)

D3 discloses a displaying device for use in control rooms, driver's cabins, etc., wherein the display information is brought into the field of view by means of transparent display screens. The display screen comprises a liquid crystal plate having two glass plates 4, a pair of pattern-like (for example a matrix) arranged transparent electrodes and a liquid crystal 5 sandwiched between the glass plates 4. The liquid crystal plate (LCD) is transparent in a deactivated state. In activated state the liquid crystal plate operates on the principle of dynamic scattering, i.e. the activated areas scatter dynamically, wherein the non-activated areas remain transparent (page 5, lines 5 to 8, page 7, lines 18 to 20 of D2). Accordingly, when information in form of lines is displayed, the display remains substantially transparent, if the portion of line-free areas is greater than that of the areas displaying lines.

In order to increase the contrast of the display, the transparency of the displayed lines compared to the transparency of non-activated areas is adjusted by means of an external filter sheet 7 or a filter layer provided on the glass plates under the transparent electrodes (page 5, lines 10 to 12, page 7, lines 22 to 28 of D3). Furthermore, there is provided an electronic drive system 12 and an illuminating system, comprising a lamp 11 and a optical guidance system 14, which is preferably provided outside of the field of view at the edge of the liquid-crystal display plate (page 8, lines 6 to 17 of D3).

Respectfully submitted,

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ALEXANDRIA, VIRGINIA 22313



RE: Application Serial No.: 10/658,473

Applicants: Masao OZEKI, et al.

Filing Date: September 10, 2003

For: COMPOSITE DISPLAY DEVICE AND A METHOD  
FOR DRIVING THE SAME

Group Art Unit: 2871

Examiner: A.M. SCHECHTER

SIR:

Attached hereto for filing are the following papers:

**Comments on References Filed by Information Disclosure Statement on January 30, 2004**

Our check in the amount of \$0.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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